REMARKS

This amendment is in response to the Office Action dated February 2, 2004. Claims 1-85 are pending in the application.

In the Office Action, the Examiner requested a confirmation of a verbal election of claims 1-35 and 69-85, objected to the information disclosure statements filed on April 1, 2002 and August 25, 2003, objected to the figures based on a duplicate submission of Fig. 4, objected to the specification for certain informalities, objected to claim 24 due to an informality, and objected to claims 23 and 78 as being dependent on a rejected base claim, but otherwise indicated they would be allowable. In addition, the Examiner rejected claims 1-13, 17-20, 22, 24, 25, 27, 69-75, 77, 79 and 80 under 35 U.S.C. § 102(b) as being anticipated by "New Intelligent Electronic Devices Change the Structure of Power Distribution Systems" ("Sezi"). Further, claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of U.S. Patent No. 6,459,175 ("Potega"). Claims 15, 26, 34 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of U.S. Patent No. 5,680,324 ("Schweitzer"). Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of "The Utility Initiative for Interoperability Between Intelligent Electronic Devices in the Substation – goals and status" ("Burger"). Claims 21, 28, 76 and 81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of U.S. Patent No. 6,380,949 ("Thomas"). Claims 29-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of U.S. Patent No. 6,587,873 ("Nobakht").

With this amendment, claims 1, 9, 24, 72 and 81 have been amended for clarity and not for reasons related to patentability. Claims 86-102 have been added.

The published image version of this application, U.S. Patent Publication No. 2003/0065459 A1, has numerous occurrences of reference designators being concatenated together. For instance paragraph [0158] of the image version of the publication notes a reference designator 18601862186418661868 instead of separate 1860 1862 1864 1866 1868 designators. The HTML version available on the USPTO website does not exhibit this problem. Correction of the published image version of the present application is requested.

Each of the objections and rejections from the Office Action of February 2, 2004 is discussed below in connection with the various claims. No new matter has been added. Reconsideration of the application is respectfully requested in light of the amended claims and the following remarks.

I.   RESTRICTION/ELECTION

The Examiner requested that the Applicant confirm the verbal election of the species described by Group I (claims 1-35) and the linking claims (69-85). The Examiner also indicated that if any of claims 69-85 were found allowable, the species best illustrated by claim 58-62 would be rejoined. Due to the fact that the Examiner has indicated that claim 78 would be allowable if rewritten in independent form, claims 58-62 have been retained and withdrawn rather than cancelled. The Applicant therefore elects the species best illustrated by Groups I, and the linking claims and that the claims of Group V shall be rejoined if any of 69-85 are deemed as having allowable subject matter.

II.   OBJECTIONS

A.   Specification

The Examiner objected to several paragraphs in the specification for various informalities.

With this response, paragraphs [0001], [0003], [0004], [0008], [0039], [0050] and [0082] have been amended to address these and additional informalities. No new matter has been added.

Accordingly, Applicants request that the Examiner withdraw these objections.

B.   Drawings

The Examiner objected to the drawings due to the duplication of Fig. 4. The examiner is hereby requested to delete the second occurrence of Fig. 4 as this appears to be a printing/copying error. No new matter has been added.

Accordingly, Applicants request that the Examiner withdraw this objection.

20

C. Claims

The Examiner objected to claim 24 due to an informality. Claim 24 has been appropriately amended.

Accordingly, Applicants request that the Examiner withdraw this objection.

D. IDS

The Examiner objected to Applicants' Second Supplemental IDS (filed April 1, 2002 with references designated "C") and Applicants' Fourth Supplemental IDS (filed August 25, 2003 with references designated "E") for failing to provide a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed. From the copies of the form 1449's initialed and returned by the Examiner, it is presumed that the Examiner's objection is based on non-patent reference, designated C14 of Applicants' Second Supplemental IDS and non-patent reference, designated E6 of Applicants' Fourth Supplemental IDS. Legible copies of these references are provided herewith.

Accordingly, Applicants request that the Examiner withdraw this objection.

III. REJECTIONS UNDER 35 U.S.C. § 102(b)

A. Independent Claims 1 and 69

Independent Claims 1 and 69 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of these claims.

Sezi discloses an IED comprising a microprocessor and an A/D converter (see Sezi section F. Self Monitoring and External Circuit Monitoring and Fig. 12, p. 950). Fig. 12 of Sezi depicts a block diagram of monitoring of the current path and includes primary CTs which would be mounted external to the IED in addition to some elements (including an A/D converter) internal to an IED. While Fig. 12 of Sezi shows an A/D converter, it fails to show that a microprocessor comprises the A/D converter. Since a CT cannot be embodied in a microprocessor, Fig. 12 of Sezi cannot be depicting a microprocessor. Therefore the A/D converter of Sezi must be a separate component from the microprocessor. Accordingly, Sezi fails to disclose at least "a processor comprising an analog to digital converter" as indicated by the Examiner. Having the A/D converter comprised within the processor provides at least

21

one of the following benefits: decreased IED cost, decreased IED power consumption, the ability to use the internal A/D to monitor for power failure without the necessity to power and external A/D, decreased IED circuitry complexity, decreased firmware complexity due to the A/D conversion results being built into the register set of the processor, etc.

Sezi also discloses an Intelligent Electronic Device with exchangeable communication modules (see Sezi p. 945, col. 1, lines 24-27 and col. 2, line 1). It is clear from the disclosure of Sezi that these modules are designed to be mounted *internal* to the IED due to the fact that these modules are printed circuit boards that are inserted into the IED in a "draw-out" fashion (Sezi Fig. 2 and p. 945, col. 2, line 7). Sezi (under section G. Tools for Settings and Configuration on pp. 950) indicates that the functionality of the IED may be configured by an external device, but not that the external device comprises any power management functionality. Therefore, Sezi fails to disclose at least "a first interface coupled with said processor and said communications interface, said first interface operative to receive a first external function module, said first external function module comprising second power management functionality, wherein said first interface is further operative to facilitate implementation of said second power management functionality" as indicated by the Examiner. Having the external function module mountable external to the IED provides at least one of the following benefits: ease of attachment/detachment of the module, protection of delicate internal components of both the IED and the module, as well as ease of upgradeability of an IED already installed, etc.

For at least the reasons given above, reconsideration of the allowability of claims 1 and 69 is respectfully requested.

B.   Dependent Claims 2, 3, 70 and 71

Dependent Claims 2, 3, 70 and 71 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of these claims. Dependent Claims 2 and 70 depend from and therefore contain all the features of independent Claims 1 and 69 respectively. Dependent Claims 3 and 71 depend from Claims 2 and 70 respectively. Therefore, for the reasons given above regarding the Claims from which they depend Claims 2, 3, 70 and 71 should be allowable.

Sezi discloses "powerful PC-tools for commissioning and testing" IEDs (see Sezi p. 950, col. 2, last paragraph). These tools are clearly used for configuration and testing of the IEDs of Sezi, but do not comprise any power management functionality themselves. Therefore Sezi fails to disclose "said first power management functionality comprises a first plurality of power management functions, said first interface being further operative to facilitate said second power management functionality to disable a first subset of said first plurality of power management functions" or "said second power management functionality comprises a second plurality of power management functions, said first interface operative to facilitate substitution of said second subset for said first subset" as indicated by the Examiner.

For at least the reasons given above, reconsideration of the allowability of claims 2, 3, 70 and 71 is respectfully requested.

C. Dependent Claim 4

Dependent Claim 4 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claim 4 depends from and therefore contains all the features of independent Claim 1. Therefore, for the reasons given above regarding Claim 1, Claim 4 should be allowable. In addition, the examiner has failed to provide any arguments as to the rejection of the additional features of Claim 4. Sezi fails to disclose the additional feature(s) of Claim 4. Accordingly, reconsideration of the allowability of Claim 4 is respectfully requested.

D. Dependent Claim 5

Dependent Claim 5 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claim 5 depends from and therefore contains all the features of independent Claim 1. Therefore, for the reasons given above regarding Claim 1, Claim 5 should be allowable. Accordingly, reconsideration of the allowability of Claim 5 is respectfully requested.

E. Dependent Claims 6 and 72

Dependent Claims 6 and 72 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of these claims. Dependent Claims 6 and 72 depend from and therefore contain all the features of Claims 5 and 69 respectively. Therefore, for the reasons given above regarding Claims 5 and 69, Claims 6 and 72 should be allowable.

Sezi discloses functions within an IED that are independent embedded units, but fails to disclose an IED with data that may be utilized irrespective of its location in this memory. Therefore, Sezi fails to disclose "(i) facilitating said second power management functionality to utilize a subset of said first set of register outputs independent of said register outputs' location in said memory" or "utilization of said set by said second power management functionality is not dependent upon a storage location of said set in said memory" as indicated by the Examiner.

Accordingly, reconsideration of the allowability of Claims 6 and 72 is respectfully requested.

F. Dependent Claim 7

Dependent Claim 7 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claim 7 depends from and therefore contains all the features of Claim 1. Therefore, for the reasons given above regarding Claim 1, Claim 7 should be allowable.

Sezi discloses an IED with many functions (Sezi p. 946, col. 1, lines 1-12), but fails to disclose an interface on the IED operative to facilitate the adding of additional functionality to the IED. Therefore, Sezi fails to disclose "said first power management functionality comprises a plurality of power management functions, said first interface being further operative to facilitate said second power management functionality to supplement a subset of said plurality of power management functions" as indicated by the Examiner.

Accordingly, reconsideration of the allowability of Claim 7 is respectfully requested.

G.   Dependent Claim 8

Dependent Claim 8 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claim 8 depends from and therefore contains all the features of Claim 7. Therefore, for the reasons given above regarding Claim 7, Claim 8 should be allowable.

Sezi discloses an IED with the ability of logical outputs to control various physical outputs (Sezi p. 945, col. 2, lines 24-27), but fails to disclose an IED with the ability to have additional register outputs added to an initial set. Therefore, Sezi fails to disclose "said subset of said plurality of power management functions comprises a set of register outputs stored in memory, said second power management functionality operative to add additional register outputs to said set" as indicated by the Examiner.

Accordingly, reconsideration of the allowability of Claim 8 is respectfully requested.

H.   Dependent Claims 9, 10, 11, 13, 17, 18, 20, 22, 24, 25, 27, 73, 75, 77, 79 and 80

Dependent Claims 9, 10, 11, 13, 17, 18, 20, 22, 24, 25, 27, 73, 75, 77, 79 and 80 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of these claims. Dependent Claims 9, 10, 11, 13, 17, 18, 20, 22, 24, 25 and 27 depend from and therefore contains all the features of Claim 1. Dependent Claims 73, 75, 77, 79 and 80 depend from claim 69. Therefore, for the reasons given above regarding Claims 1 and 69, Claims 9, 10, 11, 13, 17, 18, 20, 22, 24, 25, 27, 73, 75, 77, 79 and 80 should be allowable. Accordingly, reconsideration of the allowability of Claims 9, 10, 11, 13, 17, 18, 20, 22, 24, 25, 27, 73, 75, 77, 79 and 80 is respectfully requested.

I.   Dependent Claim 12

Dependent Claim 12 was rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claim 12 depends from and therefore contains all

the features of Claim 9. Therefore, for the reasons given above regarding Claim 9, Claim 12 should be allowable.

Sezi discloses an IED with the ability to send various data such as event logs to a PC (Sezi p. 951, col. 2, lines 26-29). Sezi discloses further analysis of this data which would typically be done by a user. Sezi fails to disclose computations on this data or returning results of computations to the IED. Therefore, Sezi fails to disclose "wherein said second power management data comprises results of computation performed by said first external function module based on said digital signal" as indicated by the Examiner.

Accordingly, reconsideration of the allowability of Claim 12 is respectfully requested.

J.   Dependent Claims 19 and 74

Dependent Claims 19 and 74 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sezi. Applicants respectfully traverse this rejection due to the fact that Sezi fails to disclose all the elements of this claim. Dependent Claims 19 and 74 depend from and therefore contains all the features of Claims 18 and 73 respectively. Therefore, for the reasons given above regarding Claims 18 and 73, Claims 19 and 74 should be allowable.

Sezi discloses an IED with real-time synchronization of event reporting (Sezi, p. 945, col. 1, lines 6,7), i.e., when an event is generated within an IED it can be communicated soon after the event occurs. Events within IEDs are exceptions to the normal operation of the IED and do not occur continuously. Therefore, Sezi fails to disclose "said digital signal is communicated to said first external function module continuously in real time" as indicated by the Examiner.

Accordingly, reconsideration of the allowability of Claims 19 and 74 is respectfully requested.

III.   REJECTIONS UNDER 35 U.S.C. § 103(a)

A.   Dependent Claim 14

Dependent Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Potega. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Potega nor the combination of the two disclose or suggest all the features of this claim. Dependent Claim 14 depends from Claim 1 and therefore for the reasons given

above, Sezi fails to disclose all the features of this claim. In addition, neither Potega nor the combination of Sezi and Potega disclose or suggest those features that Sezi fails to disclose.

Accordingly, reconsideration of the allowability of Claim 14 is respectfully requested.

B. Dependent Claim 15

Dependent Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Schweitzer. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Schweitzer nor the combination of the two disclose or suggest all the features of this claim. Dependent Claim 15 depends from Claim 1 and therefore for the reasons given above, Sezi fails to disclose all the features of this claim. In addition, neither Schweitzer nor the combination of Sezi and Schweitzer disclose or suggest those features that Sezi fails to disclose.

Accordingly, reconsideration of the allowability of Claim 15 is respectfully requested.

C. Dependent Claim 26

Dependent Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Schweitzer. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Schweitzer nor the combination of the two disclose or suggest all the features of this claim. Dependent Claim 26 depends from Claim 1 and therefore for the reasons given above, Sezi fails to disclose all the features of this claim. In addition, neither Schweitzer nor the combination of Sezi and Schweitzer disclose or suggest those features that Sezi fails to disclose.

Schweitzer discloses port task routines and the reception and transmission of data over 17 ports using an ISR (see Schweitzer col. 6, line 54 to col. 7, line 48). As far as can be understood by the Applicant, the Examiner is equating the port task routines of Schweitzer to the external function modules of the present application. It will be apparent to one of ordinary skill in the art that the port task routines of Schweitzer are software/firmware entities. As can be seen throughout the present application (for instance Fig. 8) the external functional modules of the present application are physical devices containing electronic circuitry, which may contain software/firmware, but are not themselves software/firmware entities. Therefore, for at least this reason Schweitzer fails to disclose "wherein said first

27

interface is further operative to receive a plurality of said first external function modules, each of said plurality of first external function modules comprising a second interface, wherein a first of said plurality of first external function modules is coupled with said first interface and subsequent of said plurality of first external function modules are sequentially coupled with each other via said second interface and wherein said first interface communicates with each of said plurality of first external function modules as though each was connected with said first interface" as claimed.

Therefore, neither Sezi, Schweitzer nor the combination of the two disclose the additional features of this claim.

Accordingly, reconsideration of the allowability of Claim 26 is respectfully requested.

C.   Dependent Claims 34 and 35

Dependent Claims 34 and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Schweitzer. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Schweitzer nor the combination of the two disclose or suggest all the features of this claim. Dependent Claims 34 and 35 depend from Claim 29 which depends from Claim 1 and therefore for the reasons given above regarding Claim 1, Sezi fails to disclose all the features of these claims. Neither Schweitzer nor the combination of Sezi and Schweitzer disclose or suggest those features that Sezi fails to disclose in regard to Claim 1. In addition, the Examiner has provided no reasoning as to how Sezi, *Schweitzer* or the combination of the two render Claim 29 unpatentable and Claims 34 and 35 depend from Claim 29.

Therefore, for at least the reason that neither Sezi, Schweitzer nor the combination of the two disclose the features of Claims 1 and 29.

Accordingly, reconsideration of the allowability of claims 34 and 35 is respectfully requested.

D.   Dependent Claim 16

Dependent Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Burger. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Burger nor the combination of the two disclose or suggest all the features of

28

this claim. Dependent Claim 16 depends from Claim 15 which depends from Claim 1 and therefore for the reasons given above regarding Claim 1, Sezi fails to disclose all the features of these claims. Neither Burger nor the combination of Sezi and Burger disclose or suggest those features that Sezi fails to disclose in regard to Claim 1. In addition, the Examiner has provided no reasoning as to how Sezi, *Burger* or the combination of the two render Claim 15 unpatentable and Claim 16 depends from Claim 15.

Therefore, for at least the reason that neither Sezi, Burger nor the combination of the two disclose the features of Claims 1.

Accordingly, reconsideration of the allowability of claim 16 is respectfully requested.

E.   Dependent Claims 21 and 76

Dependent Claims 21 and 76 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Thomas. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Thomas nor the combination of the two disclose or suggest all the features of this claim. Dependent Claim 21 depends from Claim 18. Dependent Claim 76 depends from Claim 73. Therefore for the reasons given above, Sezi fails to disclose all the features of these claims. In addition, neither Thomas et al. nor the combination of Sezi and Thomas et al. disclose or suggest those features that Sezi fails to disclose.

Accordingly, reconsideration of the allowability of Claims 21 and 76 is respectfully requested.

F.   Dependent Claims 28 and 81

Dependent Claims 28 and 81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Thomas. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Thomas nor the combination of the two disclose or suggest all the features of these claims. Dependent Claim 28 depends from Claim 27. Dependent Claim 81 depends from Claim 80. Therefore for the reasons given above, Sezi fails to disclose all the features of these claims. In addition, neither Thomas nor the combination of Sezi and Thomas disclose or suggest those features that Sezi fails to disclose.

29

Thomas discloses windows applications and communication between these applications (see Thomas col. 5, lines 21-41). As far as can be understood by the Applicant, the Examiner is equating the windows applications of Thomas to the external function modules of the present application. Clearly the windows applications of Thomas are software. As can be seen throughout the present application (for instance Fig. 8) the external functional modules of the present application are physical devices containing electronic circuitry, which may contain software/firmware, but are not themselves software/firmware entities. Therefore, for at least this reason Thomas fails to disclose "a first connection of said second external function module to said first external function module and a second connection of said first external function module to said interface uniquely identifies each of said first and second external function modules for subsequent individual communications by said interface based on said first and second connections" as claimed.

Therefore, neither Sezi, Thomas nor the combination of the two disclose the additional features of these claims.

Accordingly, reconsideration of the allowability of Claims 28 and 81 is respectfully requested.

G.   Dependent Claims 29 and 82

Dependent Claims 28 and 81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Nobakht. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Nobakht nor the combination of the two disclose or suggest all the features of these claims. Dependent Claim 29 depends from Claim 1. Dependent Claim 82 depends from Claim 69. Therefore for the reasons given above, Sezi fails to disclose all the features of these claims. In addition, neither Nobakht nor the combination of Sezi and Nobakht disclose or suggest those features that Sezi fails to disclose.

Nobakht discloses a system server for channel-based internet network. Part of this system includes a server that transmits channel table data, authorization codes and update available codes to a terminal (see Nobakht col. 11, lines 30-48). All of this information is data and does not include the operating or program code for the terminal. Therefore, for at least this reason Nobakht fails to disclose "wherein said base module further comprises a first non-volatile memory operative to store first program code for execution by said processor,

30

said processor being operative to access a second non-volatile memory in said first external function module via said first interface, said second non-volatile memory comprising second program code, said processor further operative to replace said first program code in said first non-volatile memory with said second program code" or "storing first program code in a first non-volatile memory in said base module; accessing a second non-volatile memory in said first external function module, said second non-volatile memory comprising second program code; and replacing said first program code in said first non-volatile memory with said second program code" as claimed.

Therefore, neither Sezi, Thomas nor the combination of the two disclose the additional features of these claims.

In addition, there is no basis in the art for combining the Sezi and Nobakht references. The Examiner indicates that the references are combinable "because replacing the code would have allowed the skilled artisan to prevent errors in the code and keep the most updated version of the code." However, neither Sezi nor Nobakht indicate any desirability of preventing errors in program code or keeping the most updated version of program code within an IED.

Accordingly, reconsideration of the allowability of Claims 29 and 82 is respectfully requested.

E.   Dependent Claims 30-33 and 83-85

Dependent Claims 30-33 and 83-85 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sezi in view of Thomas. Applicants respectfully traverse this rejection due to the fact that neither Sezi, Thomas et al. nor the combination of the two disclose or suggest all the features of this claim. These claims depend from either claim 29 or 82 as applicable and therefore should be patentable for the reasons given above.

Accordingly, reconsideration of the allowability of Claims 30-33 and 83-85 is respectfully requested.

IV. UNEXAMINED CLAIMS

Claims 58-62, withdrawn, should be allowable, given the allowability of claims 69-85, as none of the cited art discloses or suggests all elements of any of these claims. Notification of the allowability of Claims 58-62 is respectfully requested.

V. NEW CLAIMS

New Claims 86-102 depend from existing claims. Therefore, for at least the reasons given above for the claims from which they depend these claims should be found allowable. Notification of the allowability of Claims 86-102 is respectfully requested.

CONCLUSION

Each of the rejections in the Final Office Action dated February 2, 2004 has been addressed and no new matter has been added. Applicant submits that all of the pending claims are in condition for allowance and notice to this effect is respectfully requested. The Examiner is invited to call the undersigned if it would expedite the prosecution of this application.

Respectfully submitted,

James L. Katz
Registration No. 42,711
Attorney for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200